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EXAMINER

BODDIE, WILLIAM

ART UNIT PAPER NUMBER

2629

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/611,814	Applicant(s) PRYOR, TIMOTHY R.	
	Examiner William Boddie	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33,35-46,54 and 56-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33,35-46,54 and 56-59 is/are rejected.
- 7) ☐ Claim(s) 1 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In an amendment dated, March 24th, 2006, the Applicant amended independent claims 1, 25, and 54 and dependent claims 26-27, 29-30, 32, 36, 41-42, and 45-46. The Applicant also cancelled claims 34, 47-53, and 55. Finally the Applicant added new claims 56-59.

Priority

2. Applicant's claim for the benefit of prior applications is noted. Priority is acknowledged to provisional applications, 60/393,130 and 60/458,434. The Examiner appreciates the pointing to specific instances for which continuation-in-part application 09/435,854 provides priority, in the amendment dated, March 24th, 2006. As such it is seen as an appropriate continuation-in-part application.

Response to Arguments

3. On page 1 of the Remarks, Applicant states that to overcome the previous claim objections claim 55 has been cancelled and claim 54 has been amended. Claim 54 has indeed been appropriately amended; as such the previous claim objection is withdrawn.

4. Also on page 1, of the Remarks, the Applicant claims that claim 29 has been sufficiently amended to overcome the previous 35 U.S.C 112 rejection. Claim 29 has indeed been appropriately amended; as such the previous 112 rejection is withdrawn.

5. Finally at the bottom of page 1, of the Remarks, the Applicant claims that claim 45 has been sufficiently amended to overcome the previous 35 U.S.C 112 rejection. Claim 45 has indeed been appropriately amended; as such the previous 112 rejection is withdrawn.

Art Unit: 2629

6. In response to Applicant's argument that the references fail to show certain features of claim 27, it is noted that the features upon which applicant relies (i.e., that the screen occupies a majority of the area of the center stack; p. 5 of Remarks) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

7. Applicant's prior art arguments with respect to claims 1, 25, 29, 56 and 58 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

8. Claim 1 is objected to because of the following informalities: the phrase "at least function of the vehicle" is incorrect grammatically. Appropriate correction is required.

9. Claim 35 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 35 states that "said computer further controls a function of the vehicle." This limitation is already present in claim 25, which claim 35 is dependent upon.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claim 1 recites the limitation "said projector" in line 9. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 57 recites the limitation "said at least one control detail" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1-12, 16-18, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto (US 6,061,177) in view of Yasutake (US 5,483,261) and further in view of Ames et al. (US 4,787,040).

With respect to claim 1, Fujimoto discloses, a reconfigurable instrument panel, comprising: a rear projection display including a rear projection display screen (1, 17 in fig. 2) and an electro-optical sensing system (9 and 11 in fig. 2) located behind said screen; and a computer (14 in fig. 5) connected to said electro-optical sensing means (11 in fig. 5), to control said projector (17 in fig. 5).

Fujimoto does not expressly disclose, a plurality of physical details mounted to said screen, the sensing system sensing the position of the physical details and determining the desired inputs from the sensed control positions.

Yasutake discloses, a physical detail (1515 in fig. 14b) mounted in front of a screen (1505 in fig. 14), an electro-optical sensing system (1520 in fig. 14b) sensing the position of the physical detail (col. 11, lines 48-57) and determining the desired inputs from the sensed control positions (col. 12, lines 17-19).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the physical control detail and position determining means of Yasutake on the electro-optical system and projector of Fujimoto.

The motivation for doing so would have been to provide a very common means of input that the user is completely comfortable with.

Neither Fujimoto nor Yasutake expressly disclose, the use of plural controls on a touch screen system in a vehicle for controlling a function of a vehicle.

Ames discloses, a reconfigurable instrument panel (col. 2, lines 49-51), for a vehicle, electro-optically sensing (col. 2, lines 52-53) plural controls (col. 2, lines 27-28) to control functions of a vehicle (col. 2, lines 23-26).

Ames, Fujimoto and Yasutake are all analogous art because they are all from the same field of endeavor namely, electro-optical detection systems.

At the time of the invention it would have been obvious to one of ordinary skill in the art to use the reconfigurable instrument panel of Fujimoto and Yasutake with several physical control details to control the functions of a vehicle as taught by Ames.

The motivation for doing so would have been, to provide flexibility of function, environmental compatibility, and high reliability to the vehicle dashboard (Ames, col. 2, lines 20-23).

Therefore it would have been obvious to combine Fujimoto with Yasutake and Ames for the benefit ease of use and flexibility of function in vehicle dashboards to obtain the invention as specified in claim 1.

With respect to claim 2, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1 (see above).

Yasutake further discloses, wherein a computer controls a display as a result of said sensed position (col. 11, lines 24-34), stored data, or an external source.

With respect to claim 3, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1 (see above), wherein said computer controls said display as a result of data inputted to said computer (see above).

Fujimoto further discloses, wherein said computer controls said display as a result of data inputted to said computer from an external source (col. 4, lines 5-9, Fujimoto discloses the user interacting with the computer. In this case the user is the external source inputting data by touching the screen).

With respect to claim 4, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1 (see above)

Fujimoto further discloses, wherein said electro-optical sensing system is comprised by a TV camera (11 in fig. 2 and col. 9, lines 40-59, while Fujimoto does not call these video cameras "TV cameras", however Fujimoto's cameras are within the scope of TV cameras).

With respect to claim 5, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1 (see above).

Fujimoto further discloses, wherein said electro-optical sensing system is comprised by an optical sensor (11 in fig. 5) incorporated into the projector (17 in fig. 5). (In the embodiment shown in fig. 5, the camera and projector are arranged to be more compact. It is clear that the camera could be incorporated into the projector in this embodiment. Note col. 9, lines 56-59.).

With respect to claim 6, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1 (see above).

Ames further discloses wherein said computer additionally controls a desired function ((col. 2, lines 23-26).

With respect to claim 7, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1(see above).

Yasutake further discloses wherein at least one of said control details is a knob (1515 in fig. 14a).

With respect to claim 8, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1 (see above).

Yasutake further discloses, wherein absolute position of said control detail is determined (col. 12, lines 3-11).

With respect to claim 9, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1 (see above)

Fujimoto further discloses, including sensing of touch position on said screen (fig. 3 also col. 1, lines 7-16 for example).

With respect to claim 10, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 9 (see above)

Fujimoto further discloses, wherein said touch sensing is also achieved electro-optically (note fig. 2, col. 5, lines 4-28 details the operation of the electro-optical means).

With respect to claim 11, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 9 (see above).

Fujimoto further discloses, wherein said computer controls said display as a result of said sensed touch position (col. 4, lines 5-9 discusses the user interacting with the computer by touch, thus the display must be updating. Fujimoto also discloses the use of the system for word processing and spreadsheets, col. 1, lines 33-36).

With respect to claim 12, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1 (see above).

Yasutake further discloses, wherein a datum (E, F) on said physical control detail (knob in figs. 15-16) located on the users side of said screen is sensed (col. 12, lines 2-11).

With respect to claim 16, Fujimoto, Yasutake, Ames disclose, an apparatus according to claim 1 (see above).

Fujimoto further discloses, relief features incorporated into the screen (fig. 6-8).

With respect to claim 17, Fujimoto, Yasutake, Ames disclose, an apparatus according to claim 16 (see above).

Fujimoto further discloses, wherein said relief feature does not unduly disrupt images projected on said screen (col. 10, lines 22-28).

With respect to claim 18, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1 (see above)

Yasutake further discloses, wherein said physical control detail is transparent (col. 11, lines 35-47).

With respect to claim 20, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1.

Yasutake further discloses, wherein at least one of said physical control details is a dial (1515 in fig. 14b).

With respect to claim 22, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1 (see above).

Fujimoto further discloses, projection means (17 in fig. 2) that are an image modulating type, specifically DLP (col. 6, lines 60-62).

15. Claims 13 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto (US 6,061,177) in view of Ames et al. (US 4,787,040) and Yasutake (US 5,483,261) and further in view of Jaeger et al. (US 5,936,613).

With respect to claim 13, Fujimoto, Yasutake, Ames disclose, an apparatus according to claim 1 (see above).

Neither Fujimoto, Yasutake or Ames discloses, wherein a datum is sensed on a member related to said physical control detail position is located on the projector side of said screen.

Jaeger discloses, wherein a datum (544 of fig. 73) is sensed on a member (547 of fig. 73) related to said physical control detail position is located on the projector side of said screen (523 in fig. 73 and col. 30, lines 27-42 discusses the operation of these elements).

Ames, Fujimoto, Yasutake and Jaeger are all analogous art because they are all from the same field of endeavor namely, electro-optical detection systems.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include the datum on the projector side of the screen as shown by Jaeger in the invention of claim 1, disclosed by Fujimoto, Yasutake, Ames.

The motivation for doing so would have been to provide a more typical knob appearance to the user.

Therefore it would have been obvious to combine Jaeger with Fujimoto, Yasutake, and Ames for the benefit of greater ease of use to obtain the invention as specified in claim 13.

With respect to claim 23, Fujimoto, Yasutake and Ames disclose, an apparatus according to claim 1 (see above).

Neither Fujimoto, Yasutake or Ames discloses, wherein said screen incorporates two knobs space horizontally.

Jaeger discloses wherein said screen incorporates two knobs spaced horizontally (fig. 44).

At the time of the invention it would have been obvious to include a pair of knobs spaced horizontally on the projection and sensing means of Fujimoto, Yasutake and Ames.

The motivation for doing so would have been to have different functions for each knob, radio tuning and volume control for example (note Jaeger's radio display on fig. 2a and 2b)

Therefore it would have been obvious to combine Fujimoto, Yasutake, Ames and Jaeger for the benefit of different knob control functions to obtain the invention as specified in claim 23.

With respect to claim 24, Fujimoto, Yasutake, Ames and Jaeger disclose, an apparatus according to claim 23 (see above).

Jaeger further discloses, wherein displayed image on said screen corresponds to a radio configured around said two knobs, and said radio image is later reconfigured to another function (figs. 2a/2b and col. 8, lines 32-39, Jaeger states that a diverse group of circuits could also be controlled in addition to the radio).

16. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto (US 6,061,177) in view of Ames et al. (US 4,787,040) and Yasutake (US 5,483,261) and further in view of Levin et al. (US 6,154,201).

With respect to claim 14, Fujimoto, Yasutake, Ames disclose, an apparatus according to claim 1 (see above).

Fujimoto, Yasutake, Ames do not expressly disclose, wherein force feedback is provided to the user as a result of said sensed control detail or touch position.

Levin discloses, wherein force feedback (col. 2 lines 1-3) is provided to the user as a result of said sensed control detail (col. 2 lines 66-67 and col. 3 lines 1) or touch position.

Fujimoto, Yasutake, Ames and Levin are analogous art because they are from the same field of endeavor, namely novel input methods.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include force feedback functionality in the physical control features of the claim 1 invention disclosed by Fujimoto, Yasutake, Ames.

The motivation for doing so would have been to provide physical sensations to the user manipulating the knob (Levin, col. 1, lines 35-36).

Therefore it would have been obvious to combine Fujimoto, Yasutake, Ames, and Levin for the benefit of providing physical sensations to obtain the invention as specified in claim 14.

With respect to claim 15, Fujimoto, Yasutake, Ames disclose, an apparatus according to claim 1 (see above).

Fujimoto, Yasutake, Ames do not expressly disclose, wherein force feedback is provided to the user as a result of data stored in computer memory or inputted from external sources.

Levin discloses a microprocessor controlling the type and amount of force feedback that is applied to a knob (col. 1, lines 37-44). He also discloses a local memory that stores "force processes" (206 in fig. 8 and col. 23, line 16-22).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include memory controlled force feedback in the physical control features of the claim 1 invention disclosed by Fujimoto, Yasutake, Ames.

The motivation for doing so would have been to offer different types of force feedback to the user.

Therefore it would have been obvious to combine Fujimoto, Yasutake, Ames, and Levin for the benefit of different forces fed back to the user to obtain the invention as specified in claim 15.

17. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto (US 6,061,177) in view of Ames et al. (US 4,787,040) and Yasutake (US 5,483,261) and further in view of Serras-Paulet et al. (US 4,303,856).

With respect to claim 19, Fujimoto, Yasutake, Ames disclose, an apparatus according to claim 1 (see above).

Fujimoto, Yasutake, Ames do not expressly disclose, wherein said physical control detail has an opening through which said screen may be viewed.

Serras-Paulet discloses, wherein said physical control detail (4-6,9 in fig. 1) has an opening (20 in fig. 1) through which said screen (12 in fig. 1) may be viewed.

Serras-Paulet, Fujimoto, Yasutake, and Ames are all-analogous art because they are from the same field of endeavor illuminated input devices.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include an opening, taught by Serras-Paulet, in the control detail, of Fujimoto, Yasutake, Ames.

The motivation for doing so would have been to illuminate the control detail (Serras-Paulet, col. 4, lines 47-50)

Therefore it would have been obvious to combine Fujimoto, Yasutake, Ames, and Serras-Paulet for the benefit of illuminated the controls to obtain the invention as specified in claim 19.

18. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto (US 6,061,177) in view of Ames et al. (US 4,787,040) and Yasutake (US 5,483,261) and further in view of Wellner (US 5,511,148).

With respect to claim 21, Fujimoto, Yasutake, Ames disclose, an apparatus according to claim 1 (see above).

Fujimoto, Yasutake, Ames do not expressly disclose wherein said projection means is a flying spot scanning type.

Wellner discloses flying spot scanning type projection means (col. 1, lines 50-54).

Wellner, Fujimoto, Yasutake, Ames are all analogous art because they are from the same field of endeavor, namely display peripheral interface input devices.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to develop the projection means, of Fujimoto, Yasutake, Ames, as a flying spot scanning type, disclosed by Wellner.

The motivation for doing so would have been to allow projection of a document-sized image onto a work surface (Wellner, col. 1, lines 54-56) and to allow the user to interact with it.

Therefore it would have been obvious to combine Wellner, Fujimoto, Yasutake, Ames, for the benefit of user-interaction with a projected image to obtain the invention as specified in claim 21.

19. Claims 25, 27-29, 31, 33, 35, 40, 42-45, 54, 56-57 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ames et al. (US 4,787,040) in view of Yasutake (US 5,483,261).

With respect to claim 25, Ames discloses, a reconfigurable instrument panel for a vehicle (col. 2, lines 38-43), said panel comprising:

a vehicle instrument panel display having a screen (36 in fig. 20; col. 2, lines 43-49);

an electro-optical sensing system (col. 2, lines 49-53); and

a computer (display controller in fig. 3), connected to the CRT or flat panel (clear from fig. 3), to control said the display and determine from sensed touch positions,

detected by a touch sensor system (36b in fig. 4), inputs to control at least a function of the vehicle (col. 5, lines 58-62).

Ames does not expressly disclose, at least one physical control detail mounted in front of said screen; or an electro-optical sensing system located behind said screen to sense the positions of said control detail.

Yasutake discloses, mounting a physical control detail (1515 in fig. 14b) in front of a screen (1505 in figs. 14a-c), an electro-optical sensing system (1520 in fig. 14b) located behind the screen (clear from fig. 14b), to sense the positions of the physical control detail (col. 11, lines 35-61).

Yasutake and Ames are analogous art because they are both from the same field of endeavor namely, touch screen input devices.

At the time of the invention it would have been obvious to mount the physical control details of Yasutake in front of display panel of Ames and locate the shadow sensing system, taught by Yasutake, behind the display screen of Ames.

The motivation for doing so would have been to allow gestures and other multiple point commands to be input by the user, removing any restrictions on the user (Yasutake, col. 2, lines 31-35).

Therefore it would have been obvious to combine Yasutake with Ames for the benefit of removing restrictions from the user to obtain the invention as specified in claim 25.

With respect to claim 27, Ames and Yasutake disclose, an apparatus according to claim 25 (see above).

Ames further discloses, wherein the vehicle instrument panel comprises a center stack (fig. 2, 36-40) and wherein the screen of said display is located in the center stack (36 in fig. 2) and is of a size occupying a substantial portion of the center stack (seems clear that the display disclosed by Ames occupies a substantial portion of the center stack. It appears that Ames made his display as large as possible while allowing space for the components that the display actually controls.).

With respect to claim 28, Ames and Yasutake disclose, an apparatus according to claim 25 (see above).

The further limitation of claim 28 stating, wherein said screen is curvilinear, is merely a design choice. Therefore it would have been obvious to make the screen curvilinear for the benefit of aesthetics to obtain the invention as specified in claim 28.

With respect to claim 29, Ames and Yasutake disclose, an apparatus according to claim 25 (see above).

The further limitation of claim 29 stating, wherein said screen is of an irregular non-standard geometrical shape, is merely a design choice. Therefore it would have been obvious to make the screen a non-standard geometrical shape for the benefit of aesthetics to obtain the invention as specified in claim 29.

With respect to claim 31, Ames and Yasutake disclose, an apparatus according to claim 25 (see above).

Ames further discloses, locating a display in the center stack of said vehicle and extends toward the steering wheel of said vehicle (note the location of 36 in fig. 2).

With respect to claim 33, Ames and Yasutake discloses, an apparatus according to claim 25 (see above).

While Ames and Yasutake do not expressly disclose wherein video images are displayed on an upper portion of said display, it is well known in the art that liquid crystal displays can display video images. Therefore it would have been obvious to play video images on the upper portion of the LCD display. The motivation for doing so would have been to allow for a variety of user configurations.

With respect to claim 35, as claim 35 fails to further limit its parent claim 25 it is rejected on the same merits as shown above in claim 25.

With respect to claim 40, Ames and Yasutake disclose, an apparatus according to claim 25 (see above).

Ames further discloses, wherein displayed data is comprised of labels and other data relating to the function of one or more of said physical control details (col. 2, lines 23-26).

With respect to claim 59, Ames and Yasutake disclose, an apparatus according to claim 25 (see above).

Yasutake further discloses, touch sensing means for sensing xy touch position of a finger of a user on at least a portion of said display (col. 12, lines 24-50).

With respect to claim 42, Ames and Yasutake disclose, an apparatus according to claim 59 (see above).

Yasutake further discloses wherein the touch sensing is responsive to a gesture of a person using one or two fingers (fig. 16 clearly has multiple fingers, col. 11, lines 25-34).

With respect to claims 43 and 44, Ames and Yasutake disclose, an apparatus according to claim 42 (see above).

Yasutake further discloses, wherein said gesture is a sliding and a turning gesture (col. 12, lines 35-38).

With respect to claim 45, Ames and Yasutake disclose, an apparatus according to claim 25 (see above).

Ames further discloses a computer (34 in fig. 3) that processes data for both the user-input touch-screen (36 in fig. 3) as well as data from a CD player (40 in fig. 3) that are located in the vehicle (both are seen as electro-optical systems).

With respect to claim 54, Ames and Yasutake disclose, claim 25 (see above), which has identical limitations as those shown in claim 54. As claim 54 is merely a method claim recitation of the limitations of claim 25 it is rejected on the same merits shown above.

With respect to claim 56, Ames and Yasutake disclose, claim 25 (see above).

Yasutake further discloses, means for sensing the location on said screen of a finger touch of a user (col. 11, lines 54-61) and for changing information displayed by the display based on the sensed location (col. 11, lines 24-28).

With respect to claim 57, Ames and Yasutake disclose, the apparatus of claim 25 (see above).

Ames further discloses, wherein at least one control detail comprises a plurality of control details (col. 2, lines 26-29) and said electro-optical sensor senses said plurality of control details (col. 2, lines 49-54).

Ames does not expressly disclose the use of a physical control details.

Yasutake further discloses, the use of a physical control detail to simulate the use of a knob (1515 in fig. 14b).

At the time of the invention it would have been obvious to replace the touch screen display buttons of Ames with the physical control details of Yasutake.

The motivation for doing so would have been to allow gestures and other multiple point commands to be input by the user, removing any restrictions on the user (Yasutake, col. 2, lines 31-35).

Therefore it would have been obvious to combine Yasutake with Ames for the benefit of removing restrictions from the user to obtain the invention as specified in claim 25.

20. Claims 26, 30, 32, 41, 46, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ames et al. (US 4,787,040) and Yasutake (US 5,483,261) further in view of Fujimoto (US 6,061,177).

With respect to claim 26, Ames and Yasutake disclose, an apparatus according to claim 25 (see above).

Neither Ames nor Yasutake expressly disclose, including a projector controlled by said computer to provide rear projection display on said screen.

Fujimoto discloses, a projection system (fig. 17), that operates in a rear projection manner (note fig. 2 or fig. 5) and is controlled by a computer (14 in fig. 5).

Ames, Fujimoto and Yasutake are all analogous art because they are all from the same field of endeavor namely, electro-optical detection systems.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the CRT or LCD the panel of Ames and Yasutake with a rear projector as a means for display as taught by Fujimoto

The motivation for doing so would have been that projection systems allow the display screen size to be modified more easily than the LCD panel of Ames and Yasutake (Fujimoto, col. 1, lines 41-43).

Therefore it would have been obvious to combine Fujimoto and Ames and Yasutake for the benefit of altering the display screen size to obtain the invention as specified in claim 26.

With respect to claim 30, Ames and Yasutake disclose, an apparatus according to claim 25 (see above).

Neither Ames nor Yasutake expressly disclose a display area size of at least 90 square inches.

Fujimoto discloses, wherein said display has an area of at least ninety square inches (col. 4, lines 15-21).

At the time of the invention it would have been obvious to one of ordinary skill in the art to use the large scale electro-optical sensing system of Fujimoto to detect touches on the reconfigurable instrument panel of Ames and Yasutake.

The motivation for doing so would have been, to provide scalability (Fujimoto, col. 3, lines 49-51).

Therefore it would have been obvious to combine Fujimoto with Yasutake and Ames for the benefit scalability to obtain the invention as specified in claim 30.

With respect to claim 32, Ames and Yasutake disclose, an apparatus according to claim 25 (see above)

Ames and Yasutake do not expressly disclose, wherein said display screen is made of plastic.

Fujimoto discloses a display screen made out of plastic (col. 4, lines 62-67).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to replace the LCD display of Ames and Yasutake with the plastic screen and projection system of Fujimoto.

The motivation for doing so would have been that the use of a plastic display screen allows for a much more flexible screen size than that of LCD panels (Fujimoto; col. 1, lines 41-43).

Therefore it would have been obvious to combine Fujimoto and Ames and Yasutake for the benefit of flexible screen size to obtain the invention as specified in claim 32.

With respect to claim 41, Ames and Yasutake disclose, an apparatus according to claim 33 (see above).

Ames and Yasutake do not expressly disclose, wherein a video image is provided on the screen, which can be touched at a desired location to acknowledge or confirm data presented.

Fujimoto discloses, the user interacting with the computer. In communicating with a general-purpose computer, a user commonly acknowledges data presented. Fujimoto discloses a general-purpose computer (col. 4, lines 6-9) for use with office applications for example (col. 1, lines 33-36).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to design the system of Ames and Yasutake so that displayed images can be acknowledged, as taught by Fujimoto.

The motivation for doing so would have been to allow interaction between the displayed images and the user.

Therefore it would have been obvious to combine Fujimoto with Ames and Yasutake for the benefit of interaction between the computer and user to obtain the invention as specified in claim 41.

With respect to claim 46, Ames and Yasutake disclose, an apparatus according to claim 59 (see above) wherein data to be acted on by touch on said screen (36 in fig. 3) is under control of said computer (34 in fig. 3).

Ames and Yasutake do not expressly disclose wherein the data is projected.

Fujimoto discloses a projection system (fig. 5) that projects the data onto a touch screens (fig. 2 for example.)

At the time of the invention it would have been obvious to a person of ordinary skill in the art to replace the LCD display of Ames and Yasutake with the projection system of Fujimoto.

The motivation for doing so would have been that projection allows for a much more flexible screen size than that of LCD panels (Fujimoto; col. 1, lines 41-43).

Therefore it would have been obvious to combine Fujimoto and Ames and Yasutake for the benefit of flexible screen size to obtain the invention as specified in claim 46.

With respect to claim 58, Ames and Yasutake disclose, the apparatus according to claim 25 (see above).

Neither Ames nor Yasutake expressly disclose, wherein a portion of said screen is non-flat.

Fujimoto discloses, a screen wherein a portion of said screen is non-flat (figs. 6-8).

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the CRT or LCD the panel of Ames and Yasutake with a rear projector as a means for display as taught by Fujimoto

The motivation for doing so would have been that projection systems allow the display screen size to be modified more easily than the LCD panel of Ames and Yasutake (Fujimoto, col. 1, lines 41-43).

Therefore it would have been obvious to combine Fujimoto and Ames and Yasutake for the benefit of altering the display screen size to obtain the invention as specified in claim 58.

21. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ames et al. (US 4,787,040) and Yasutake (US 5,483,261) further in view of Yamaguchi (US 6,441,807).

With respect to claim 36, Ames and Yasutake disclose, an apparatus according to claim 25 (see above).

Ames and Yasutake do not expressly disclose, wherein said screen is easily interchanged.

Yamaguchi discloses an interchangeable screen (22 and 21 in fig. 2) for a touch screen unit (10 in fig. 2) with projector input means (106 in fig. 12).

Yamaguchi, Ames and Yasutake are analogous art because they are from the same field of endeavor, namely display peripheral interface input devices.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the interchangeable screens of Yamaguchi with the reconfigurable display screen of Ames and Yasutake.

The motivation for doing so would have been to allow more flexibility of uses for the users (for example sheet 23 in fig. 3).

Therefore it would have been obvious to combine Ames, Yasutake and Yamaguchi for the benefit of greater flexibility and range of uses to obtain the invention as specified in claim 36.

22. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ames et al. (US 4,787,040) and Yasutake (US 5,483,261) further in view of Cragun et al. (US 5,412,189).

With respect to claim 37, Ames and Yasutake disclose, apparatus according to claim 25 (see above).

Ames and Yasutake do not expressly disclose, wherein said screen incorporates relief features to aid operation by feel.

Cragun discloses, relief features (i.e. tactile information) on a touch screen (col. 1, lines 54-57).

Ames, Yasutake and Cragun are analogous art because they are from the same field of endeavor, namely touch screen technology.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include relief features on the sensing system disclosed by Ames and Yasutake.

The motivation for doing so would have been to allow visually impaired passengers to also use the device (Cragun, col. 1, lines 43-45).

Therefore it would have been obvious to combine Ames, Yasutake and Cragun for the benefit of the visually impaired passengers to obtain the invention as specified in claim 37.

23. Claims 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ames et al. (US 4,787,040) and Yasutake (US 5,483,261) further in view of Levin et al. (US 6,154,201).

With respect to claim 38, Ames and Yasutake disclose, apparatus according to claim 25 (see above).

Ames and Yasutake do not expressly disclose, wherein said screen incorporates force feedback features controlled by said computer to aid operation of said physical control details by feel.

Levin discloses, wherein force feedback (col. 2 lines 1-3) is provided to the user as a result of said sensed control detail (col. 2 lines 66-67 and col. 3 lines 1) or touch position.

Ames and Yasutake and Levin are analogous art because they are from the same field of endeavor, namely novel input methods.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to include force feedback functionality in the reconfigurable input display screen of Ames and Yasutake.

The motivation for doing so would have been to provide physical sensations to the user manipulating the knob (Levin, col. 1, lines 35-36).

Therefore it would have been obvious to combine Ames, Yasutake and Levin for the benefit of providing physical sensations to obtain the invention as specified in claim 38.

24. Claims 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ames et al. (US 4,787,040) and Yasutake (US 5,483,261) further in view of Blouin (US 5,977,867).

With respect to claim 39, Ames and Yasutake disclose, an apparatus according to claim 25 (see above).

Ames and Yasutake do not disclose expressly, wherein said screen incorporates force feedback features controlled by said computer to aid operation of said touch position sensing by feel.

Blouin discloses a tactile feedback unit (16 in fig. 2) incorporated into the screen that aids operation of touch position sensing by feel (col. 2, lines 48-56) and is controlled by a computer (3 in fig. 1).

Blouin, Ames and Yasutake are analogous art because they are from the same field of endeavor namely, display peripheral interface input devices.

At the time of the invention it would have been obvious to include the tactile feedback of Blouin on the screen of Ames and Yasutake.

The motivation for doing so would have been to allow manipulation of the screen without having to look at the screen.

Therefore it would have been obvious to combine Ames, Yasutake and Blouin for the benefit of not having to watch the screen to manipulate it, to obtain the invention as specified in claim 39.

Conclusion

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Will Boddie whose telephone number is (571) 272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

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Wlb
5/16/06

AMR A. AWAD
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", written over a horizontal line.